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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/564,892	01/17/2006	Moon-Soo Han	0001.1125	3441

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EXAMINER	
PENDLETON, DIONNE	

ART UNIT	PAPER NUMBER
2627	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

usptomail@smiplaw.com

Office Action Summary	Application No.	Applicant(s)	
	10/564,892	HAN, MOON-SOO	
	Examiner	Art Unit	
	DIONNE H. PENDLETON	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *9 and 13-16* is/are allowed.

6)☒ Claim(s) *1-8 and 10-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. **Claims 1-8 and 10-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Aoe (US 2004/00130057)** in view of **Hong (Patent Number 7,012,861)** in view of **Akiyama (Patent Number 5,712,835).**

Regarding apparatus claim 1 and method claim 4,

AOE teaches an apparatus for performing track jumping, the apparatus comprising:

a pickup **("14" in figure 7**) to read a signal from an optical disc;

an RF processing unit **("16" in figure 7)** to generate an error signal to control the pickup by shaping and amplifying the signal read by the pickup **([0047]);**

a servo **("18")** to judge a position of the pickup based on the error signal **([0047])**; and a driver to move the pickup **([0047] teaches moving the pickup for tracking/ focusing control).**

Aoe fails to expressly teach the generation of track jump start and end control signals, or that track jumping Is performed in consideration of the position of the pickup.

Hong teaches an apparatus for performing track jumping, the apparatus comprising:

a pickup **("202" in figure 5)** to read a signal from an optical disc;

an RF processing unit **("203", in figure 5)**;

a servo **(see combination of elements 205 and 206 in Figure 5)** to generate a track jump start control signal ***(column 7:18-55 discloses generation of a tracking drive signal and jump signal, under the control of controller "206")*** and generate a track jump end control signal ***(column 7, line 64 through column 8, line 3, discloses generation of a kick pulse and brake pulse under the control of controller "206");***

and a driver **("210" in figure 5)** to move the pickup directly to a target track of the optical disc in response to the track jump start control signal, and stop moving the pickup in response to the track jump end control signal.

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Aoe and Hong, such that the device of Aoe includes a servo operating to generate track jump start and end control signals for the driver, for the purpose moving the light spot of the pickup to a target track and commencing data reproduction and/or recording.

Hong fails to expressly teach that the track jump start control signal is based on the judged current position of the pickup.

AKIYAMA teaches an optical disk drive apparatus wherein in an access operation from a position P2 to a target position P3, the light spot is correctly positioned in the center of the track before the start of the track jump **(column 4, lines 59-66,**

column 7, lines 14-25, column 8, lines 62-65 and column 9, lines 6-11). Akiyama is therefore interpreted as teaching that when the pick up is at point P2, i.e., "current position", the track jump from P2 to P3 is based on the judged current position of the pickup (whether or not the beam spot is centered), since the track jump from position P2 starts only after the position of the light spot has been corrected **(column 4, lines 59-66)**.

It would have been obvious for one of ordinary skill in the art at the time of the invention to alter the invention of AOE and HONG per the teachings of AKIYAMA, for the purpose of improving the accuracy of the access operation.

Regarding claim 2,

Akiyama teaches wherein if the judged position of the pickup unit is within a reference range e.g. the center of the track, the servo outputs a predetermined voltage as the track jump start control signal to the driver **(column 9:5-11 discloses that the light spot must be appropriately positioned *before* the second track jump)**.

Regarding claim 3,

The combined disclosures of Aoe, Hong and Akiyama, specifically Akiyama teaches that if the judged position of the pickup unit is not within a reference range e.g. the center of the track, the servo cuts off a predetermined voltage from being output as the track jump start control signal to the driver ***(the velocity generating signal is cut off following the completion of the first jump but prior to the start of the second jump, for the purpose of adjusting the position of the light spot)*** until the judged

position of the pickup is within the reference range **(column 9:5-11 discloses that the light spot must be appropriately positioned i.e., "within the reference range" *before* the second track jump commences).**

Regarding claim 5,

The combined disclosures of Aoe, Hong and Akiyama, specifically Akiyama teaches wherein if the judged position of the pickup unit is within a reference range e.g. the center of the track, the servo outputs a predetermined voltage as the track jump start control signal to the driver **(column 9:5-11 discloses that the light spot must be appropriately positioned *before* the second track jump)**;

and if the judged position of the pickup unit is not within a reference range e.g. the center of the track, the servo cuts off a predetermined voltage from being output as the track jump start control signal to the driver ***(the velocity generating signal is cut off following the completion of the first jump but prior to the start of the second jump, for the purpose of adjusting the position of the light spot)*** until the judged position of the pickup is within the reference range **(column 9:5-11 discloses that the light spot must be appropriately positioned i.e., "within the reference range" *before* the second track jump commences)**.

Regarding claim 6,

The combined disclosures of **Aoe** and **Hong** teach an apparatus for performing track jumping of an optical pickup in an optical disc recording/reproducing apparatus, the apparatus comprising:

an RF processing unit **("16" in figure 8 of Aoe)** to generate an error signal to control the pickup by shaping and amplifying the signal read by the pickup;

a servo **("18" in figure 8 of Aoe; "205" in Hong)** to judge a current position of the pickup relative to a track of the optical disc based on the positional error signal, and output a tracking control signal for controlling a position of the optical pickup based on the judged current position;

a driver **("210" in figure 5 of Hong)** to control the position of the optical pickup using the tracking control signal output from the servo to move the pickup directly to a target track of the optical disc;

and Hong teaches a controller **(206)** for monitoring tracking and control track jumping.

Hong fails to teach that the controller also operates to delay outputting the track jump start control signal to the driver until the tracking control signal indicates that the position of the optical pickup is in a predetermined location.

AKIYAMA teaches that a controller **("8" in figure 2)** for monitoring the tracking control signal **(TES)** and controlling track jumping based on the tracking control signal **(column 6, lines 61 through column 7, line 4)** and is further interpreted as teaching that a track jump start control signal is generated only if the "current" position of the optical pickup is at a predetermined location. Specifically, Akiyama teaches that prior to jumping from position P2 to position P3, the light spot is correctly positioned in the center of the track before the start of the track jump **(column 8, lines 62-65 and**

column 9, lines 6-11). Akiyama is thereby fairly interpreted as teaching that if the current position of the optical pickup is not at a predetermined location i.e., the tracks center as determined by tracking control unit **("5" in figure 2),** the track jump start control signal is not enabled.

The combined disclosures of Aoe, Hong and Akiyama do not expressly teach that the controller outputs a track jump start control signal only if the position of the optical pickup is within a *predetermined range* of the center of the track. However, since Akiyama teaches that by centering the light spot on the instant track prior to commencing a track jump, the accuracy of a track jump is improved, it follows that delaying a track jump until the pickup is within a predetermined range of a center of a track, will also act to increase the accuracy of a subsequent track jump.

Therefore, It would have been obvious for one of ordinary skill in the art at the time of the invention to alter the invention of Aoe, Hong per the teachings of AKIYAMA, for the purpose of improving the accuracy of the access operation.

Regarding claim 7,

Hong teaches a controller **(209 in figure 5)** outputs a track jump start signal to the driver, sets an output time of the track jump-end signal **(column 7:64 – column 8:3)**, and calculates a target track to be jumped **(Hong discloses that a TZC signal is used as a reference signal for controlling a kick pulse, brake pulse and a brake time during a track jump, thus implying that the target track is "calculated" so as to accurately reach the target track during an access operation.)**

Regarding claim 8,

Hong teaches the apparatus of claim 6, wherein: the controller outputs the track jump end signal to the driver when the optical pickup arrives at the target track **(column 9:39-55).**

Regarding claims 10-12,

Hong teaches that a track jump signal including a kick pulse/voltage and a stop pulse i.e., "brake voltage" may be used to accurately achieve track jump operations. **(column 7: 64 - column 8:3).**

Response to Arguments

2. Regarding Applicant's argument that: **It Is Not Seen In AOE, Or Suggested That The Pickup Servo 18 Judges A Current Position Or Any Other Position Of The Optical Pickup:**

Paragraph [0047] discloses that an electrical signal is output from pickup (14) and sent to RF amplifier (16). RF amplifier (16) generates a tracking error signal (TE). Said TE signal is interpreted as corresponding to a *judged current position,* as it is well known in the art that the TE signal is used for determining the precision of a tracking servo. Infact, paragraph [0031] of the Applicant's own disclosure, states that it is by the error signal generated by RF processing unit (202), that the position of the pickup is judged.

3. Applicant's arguments related to Nakatsu, have been considered but are moot in view of the new ground(s) of rejection.

4. Regarding Applicant's argument that: **Nothing Whatsoever In Akiyama Indicates That The Track Jump Control Signal Is Generated Based Upon The Judged Position Of The Optical Pickup:**

Arguments by the Applicant are not persuasive since Akiyama discloses executing a second jump after the beam spot has been centered, and as illustrated in Figure 3, where TES is equal to 0.

5. Regarding the Applicant's argument that **Nothing Whatsoever In Akiyama Indicates That The Track Jump Control Unit 8 Generates The "Track Jump Start Control Signal":**

Column 6, lines 21-26 discloses that switch 9, is controlled by track jump control unit 8, in response to the TES signal, see figure 3. Therefore, track jump control unit 8 will initiate one of tracking mode or track jump mode via switch, in response to the TES signal.

6. Applicant's arguments related to Claim 9 as being unpatentable over Aoe in view of Nakatsu, Akiyama and Hirai, have been considered.

Allowable Subject Matter

7. Claims 9 and 13-16 are allowed.

The prior art fails to teach of to suggest judging that the optical pickup is in a predetermined location at a time of a track jump command. Specifically, Akiyama teaches that the verification of correct positioning takes place after the initial jump command, but prior to reaching the target track, namely, position verification takes place at position P2, which fails to fairly correspond to occurring "at a time of a track jump command", as recited in claim 9.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DIONNE H. PENDLETON whose telephone number is (571)272-7497. The examiner can normally be reached on 10:30-7:00 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Dionne H Pendleton/
Examiner, Art Unit 2627

/Wayne Young/
Supervisory Patent Examiner, Art Unit 2627